

Cardiac complications in a pregnant patient with rheumatic valve disease: a cautionary tale

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Introduction

- Pregnancy poses a risk for patients with valvular heart disease: 20-25% risk of heart failure with moderate to severe mitral regurgitation and 30-50% risk with mitral stenosis.¹
- All patients with significant mitral stenosis should be counselled against pregnancy and intervention pre-pregnancy is favoured, even if asymptomatic.¹
- This case highlights learning points relating to valvular disease in pregnancy. Written consent obtained for presentation.

Background

- 42 year-old gravida 3 para 2 patient.
- Known rheumatic mitral valve disease but stable cardiac function on last TTE 2 years prior.
- IVF due to previous tubal ligation.
- Deemed safe to have IVF by local cardiology clinic on basis of stable symptoms since previous imaging.
- Presented breathless to local hospital at 31/40 and admitted to ICU.
- Found to have severe mitral regurgitation and significant mitral stenosis (figures 1 and 2).
- Transferred to tertiary hospital CCU and stabilised with B-blockers and furosemide.
- MDT – caesarean birth planned at 34/40.

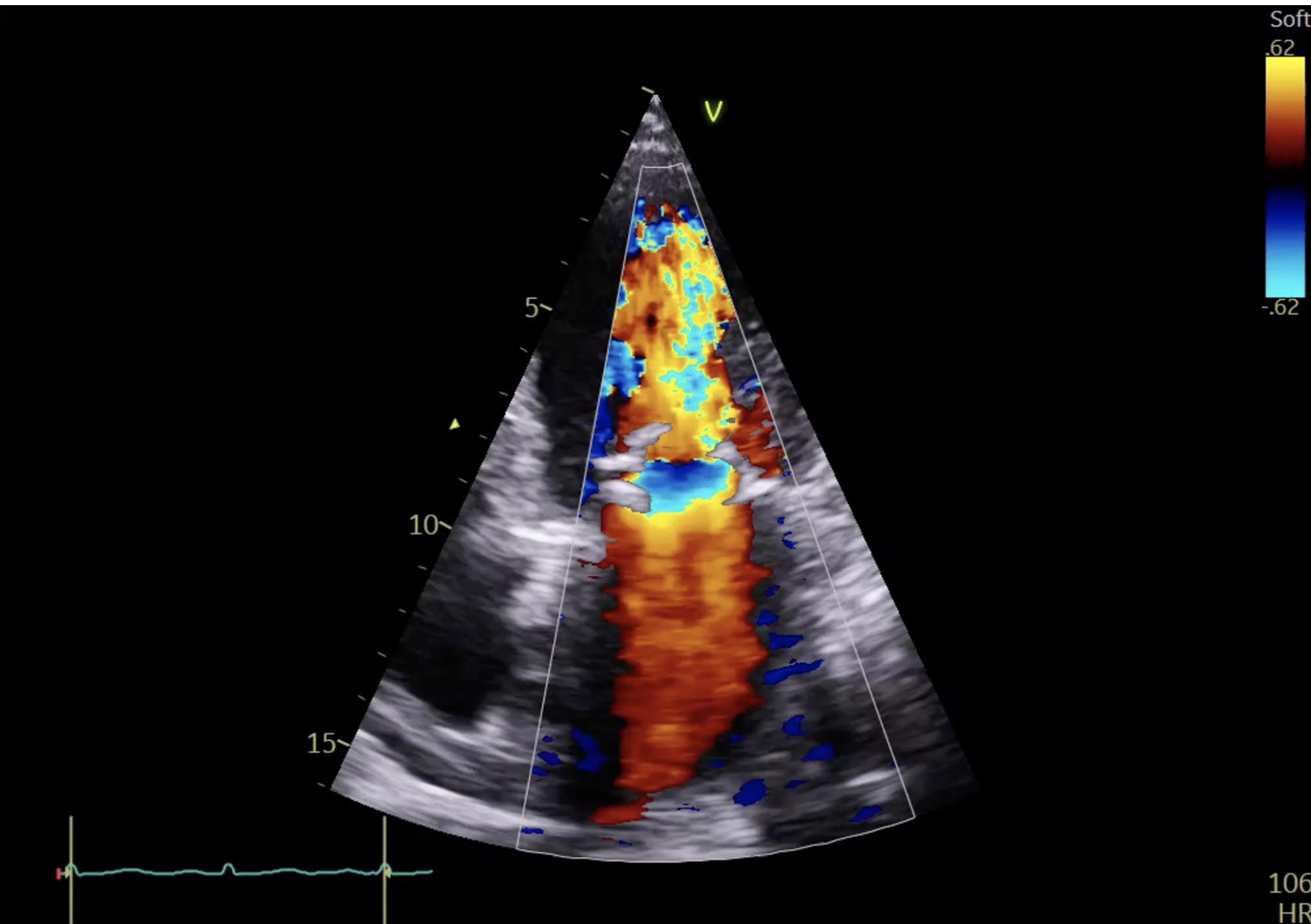


Figure 1: Apical four chamber view showing mitral regurgitation.

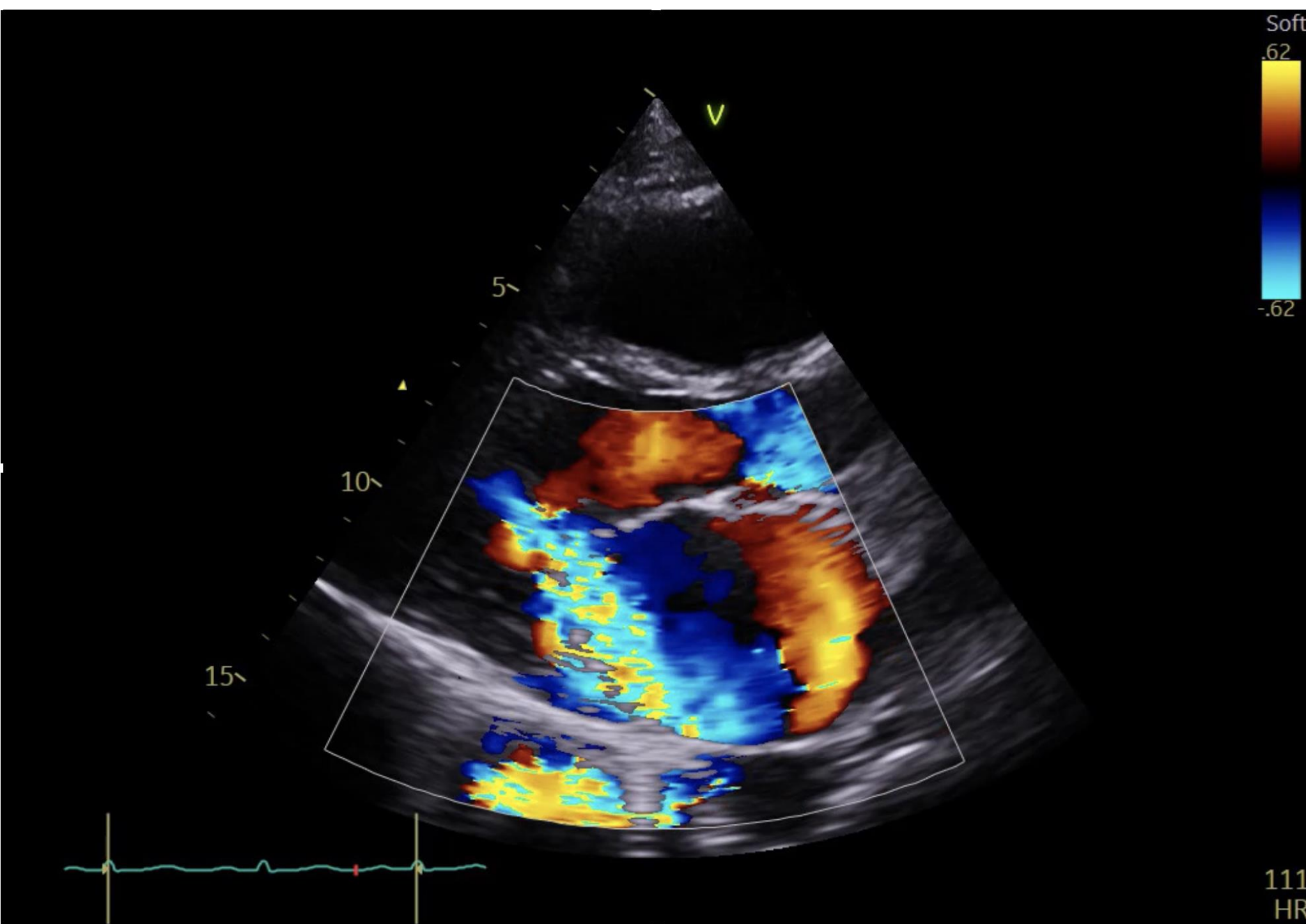


Figure 2: Parasternal long axis view showing enlarged left atrium and mitral regurgitation.

Anaesthetic management

- Arterial line sited prior to low dose combined spinal-epidural (CSE).
- Peripheral noradrenaline infusion (6 µg.ml⁻¹).
- Fluid restriction.
- Avoid carboprost and rapid syntocinon bolus.
- Pulmonary oedema after birth from placental autotransfusion – responded to furosemide bolus.
- High dependency protocol on delivery suite 48 hours post-op, followed by transfer to CCU.

RV priorities

- Avoid hypoxia
- Avoid acidosis
- Avoid pain/anxiety
- Avoid increased intrathoracic pressure
- Normothermia

LV priorities

- Sinus rhythm
- Maintain SVR- Coronary perfusion
- Low normal HR
- Prevent fluid overload
- Maintain O₂ delivery
- Avoid hypotension

Follow up

- Post delivery echo showed stable cardiac function + no further immediate interventions required.
- Post discharge: both mother and baby are healthy. Mother recovered well and has been listed for valve replacement surgery.

Discussion

- Counselling on antenatal risks – European Society of Cardiology recommend ECG, TTE and stress testing as a minimum + close follow up in joint cardiac obstetric clinic during pregnancy.¹
- Peripheral noradrenaline infusion is non-inferior to phenylephrine² and may have benefits for patients with cardiac disease – maintain systemic vascular resistance with less bradycardia.
- Risk of intraoperative pulmonary oedema predictable in patients with impaired cardiac function (~500 ml autotransfusion from placenta following birth).

References

- (1) Regitz-Zagrosek V, Roos-Hesselink JW, Bauersachs J, et al. 2018 ESC Guidelines for the management of cardiovascular diseases during pregnancy. *Eur Heart J* 2018; **39**: 3165-241. <https://doi.org/10.1093/eurheartj/ehy340>
(2) Ngan Kee WD, Lee SWY, Ng FF, Lee A. Norepinephrine or phenylephrine during spinal anaesthesia for caesarean delivery: a randomised double-blind pragmatic non-inferiority study of neonatal outcome. *Br J Anaesth* 2020; **125**: 588-95. <https://doi.org/10.1016/j.bja.2020.05.057>